



Caltech SURF Program

Reflection

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About Me

I'm currently a junior, soon to be a senior, majoring in CSIE. My primary research interest lies in applying machine learning techniques to the medical field, with a specific focus on disease detection. Over the past year, I have been conducting research on acoustic signal processing of blood bruits at Academia Sinica.

Additionally, during my third year of university, I had the opportunity to spend a year as an exchange student at the University of New South Wales (UNSW) in Sydney, Australia. Initially, my plan was to pursue a PhD in the United States after completing my undergraduate degree, with the goal of working in an R&D group within a tech company. This program, however, has significantly influenced my perspective on my future academic and professional path.

Effects on My Research Career

When I joined this program, I was just about to enter my senior year. Prior to my junior year, I had firmly planned on pursuing a PhD in the USA for several reasons: (1) I had long dreamed of studying abroad to experience different cultures and campus life, (2) I had demonstrated strong academic performance, particularly in science fairs, where I represented Taiwan at the International Science and Engineering Fair (ISEF) and received an exam waiver to enter NTU CSIE, and (3) financially, a PhD offered a more viable option compared to a Master's degree, which would have required more personal funding. Given these factors, I felt confident that pursuing a PhD immediately after graduation was the right path.

However, during my junior year, my exchange to UNSW fulfilled my dream of studying abroad. The experience was eye-opening, but it also led to new uncertainties. At the same time, my research at Academia Sinica faced significant obstacles, with no promising outcomes after a year of effort. This caused me to feel lost about whether pursuing a PhD in the USA was still the best option for me.

During this program, I had the opportunity to experience life as a researcher in the US. The flexibility in planning your own schedule and managing your time was something I enjoyed. My typical day during the program looked like this:

- Wake up at 7 am
- Study Japanese until 9 am
- Work in the office from 10 am to 4 pm
- Go to the gym from 5 to 7-8 pm (The gym offered two to three exercise classes every day, which I absolutely loved! 🍷)
- Sleep around 10-11 pm

I found this routine quite enjoyable, and if I ever wanted to take a day off for relaxation or travel around Pasadena, I could do so as long as I worked hard on the other days. After experiencing this level of freedom in a researcher's life, I began to think that perhaps I should explore working in industry before fully committing to the academic path. A Master's degree could offer an industry-oriented focus, while a PhD would lean more towards a scholarly path. This realization has made me reconsider my plans for pursuing a PhD right away.

Finding a Principal Investigator (PI)

When I was searching for a PI for this program, I initially looked into the faculty within the Engineering & Applied Science Department. However, most of their research was centered around theoretical work and mathematics, which didn't align with my interest in applied machine learning. As a result, I turned to the Biology & Biological Engineering Faculty and reached out to Ralph Adolphs, my current PI.

In my email, I introduced myself, highlighting my major and research experience, particularly my background in machine learning. One valuable piece of advice I received from a professor was to explain how my skills and knowledge could contribute to their ongoing projects. For example, I suggested the contrastive self-supervised techniques I had used in my previous research could be applied to their work.

After two interviews, where I reintroduced myself and my PI outlined the current projects in his lab, he agreed to supervise me. I was fortunate that he was only the second professor I contacted, but I know others who had to reach out to six or seven professors before finding a match. Therefore, I highly recommend starting this process early.

The program office also provides helpful resources for finding a mentor, which I made sure to review before reaching out. Their guide can be found here: [SFP Finding a Mentor](#).

Funding & Costs

The program offers a stipend of \$7,740, though it's important to note that this amount is subject to taxes. As an international student, I received approximately \$6,942 after taxes. From what I've seen, this program provides one of the highest stipends compared to other overseas research programs. However, it's worth noting that the cost of living in the U.S. is significantly higher than in Taiwan, roughly three times more. My total cost is almost the same as the funding, but this includes a week of Seattle and Yellowstone travel.

Events

The Student-Faculty Programs (SFP) Office organized several events during the first six weeks of the program, usually held on Saturdays. These included trips to Santa Monica, Huntington Library & Gardens, Griffith Observatory, and the Hollywood Bowl for an orchestra performance. These events were a great way to travel and explore at a lower cost, and sometimes they even provided free movie tickets for screenings of new films like *Despicable Me 4* and *Deadpool & Wolverine*. They also invited distinguished scholars, including Nobel Prize winners, to deliver talks. These events provide an opportunity to learn new techniques and gain insights into their scientific journeys. It's a valuable chance to seek advice from them, especially if you're concerned about your career path.

Summary

I would highly recommend this program or a similar exchange experience to anyone considering studying in the U.S., especially if you're planning to pursue a PhD. It provides a unique opportunity to experience conducting research at a top institution and interacting with some of the brightest minds in the field. However, it's also important to be prepared for the challenges, such as safety concerns, unfamiliar food (I missed Taiwanese food during my time abroad!), and the loneliness that comes from being far from home and close friends. Ultimately, it's important to understand your motivations for pursuing research or studying abroad and make an informed decision, rather than simply following the path because it seems like the norm.

In conclusion, I am incredibly grateful for the opportunity to participate in this program. It has broadened my horizons and given me a clearer understanding of the realities of a research career, helping me better navigate my future academic and professional journey.

Contact Info

Feel free to reach out if you have any questions about this program or anything else!

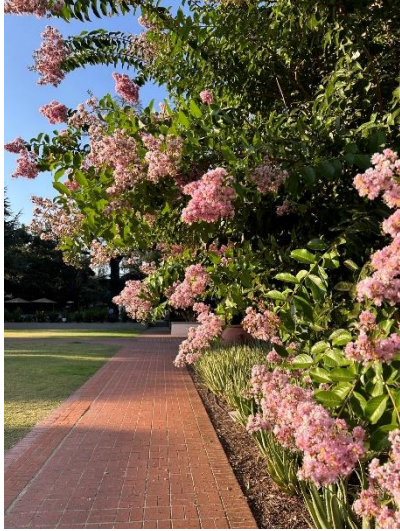
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Photos on next page!

➤ Campus



➤ LA

